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Research Article

**Diverse pathways in young Italians' entrance
into sexual life: The association with gender and
birth cohort**

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Diverse pathways in young Italians' entrance into sexual life: The association with gender and birth cohort

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Abstract

BACKGROUND

Sexual development is a complex process, the study of which should consider not only first sexual intercourse but also multiple behavioural trajectories in a comprehensive perspective. Moreover, first romantic relationships and sexual experimentation during adolescence form the building blocks for subsequent more mature relationships and sexual behaviours later in life.

OBJECTIVE

This study focuses on young Italians' first romantic and sexual experiences, with a twofold aim. We seek to both describe the trajectories characterising the first stages of youths' affective and sexual development and to study the differences among them by gender and birth cohort.

METHODS

Applying sequence analysis and subsequent cluster analysis to a sample taken from two surveys conducted in 2000–2001 and 2017 on Italian university students, we identify young people's affective and sexual development trajectories. This is followed by a multinomial logistic regression analysis to discern the effect of gender and birth cohort on the probability of belonging to a given pathway.

RESULTS

We identify six distinct sexual ideal types among young men and women, with gender differences that characterise the trajectories of affective and sexual development of most university students. That said, our results also suggest that differences between the two genders have narrowed over time.

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The findings confirm the importance of not only considering first sexual intercourse and the 'typical' trajectory of affective and sexual development but also accounting for diverse trajectories so as to accurately capture the complexity of youths' early romantic and sexual lives.

1. Introduction

Romantic relationships and sexual experimentation during adolescence form the building blocks for subsequent more mature relationships and sexual behaviours later in life (De Graaf and Rademakers 2006; Joyner and Campa 2006). As such, a broad definition of romantic and sexual development must necessarily be adopted. Indeed, in addition to the traditional milestone of first sexual intercourse, events of fundamental importance in the process of transition from adolescence to adulthood include first romantic relationship and first incomplete sexual experience, ranging from kissing to light and heavy petting (Billari and Ongaro 2004; van de Bongardt et al. 2014; Dalenber, Timmermann, and van Geert 2018; Olmsted 2020).

Recently, two important changes have emerged with regard to young romantic relationships and sexual life. First, adolescents' engagement in these activities has increasingly come to be seen as a normative feature of individual development and the transition to adulthood, as opposed to risky behaviours to be prevented (Collins, Welsh, and Furman 2009; Tolman and McClelland 2011). Second, this shift in perspective has been accompanied by a change in empirical research. From an exclusive focus on factors that may prevent youth from experiencing romantic or sexual relationships, many studies now seek to gain a broader understanding of the diverse trajectories wherein adolescents engage in (or abstain from) romantic relationships and sexual behaviours – important factors in the formation of later adult relationships (Boislard, van de Bongardt, and Blais 2016; O'Sullivan et al. 2007; Vasilenko et al. 2015).

In this framework, gender continues to be a crucial factor in explaining young people's differing pathways relative to romantic relationships and sexual behaviour (e.g., Wesche, Lefkowitz, and Vasilenko 2017). That said, there is evidence among the most recent cohorts that young women's trajectories have begun to converge with those of their male counterparts (Bajos et al. 2010).

We seek to move beyond these premises through an exploration of young Italians' first romantic and sexual experiences that aims to both (a) describe the trajectories characterising these youths' early affective and sexual development and (b) discern the differences among these pathways by gender and birth cohort. Our first objective

responds to a need to consider youths' affective and sexual development as a complex event, defined not only by first sexual intercourse (as often occurs in the literature) but also other events, such as first romantic relationship and first incomplete sexual experience. This has become even more important as – when compared to the past, when a largely predominant male/female pathway to sexual debut existed (for more details, see Fabris and Davis 1978; Barbagli, Castiglioni, and Dalla Zuanna 2004; Barbagli, Dalla Zuanna, and Garelli 2010) – today this process is more complex. As such, analyses of young people's romantic and sexual trajectories must necessarily consider the eventuality of multiple pathways. To this end, in a first step, we explore young Italians' emotional and sexual life trajectories through a sequence analysis, identifying different profiles in a subsequent cluster analysis. In a second step, we scrutinise whether and how the propensity of belonging to a specific trajectory varies by gender and birth cohort, as well as whether this has changed over time by gender. Our setting is particularly well suited to exploring this question. Indeed, while Italy has long been considered an archetype of the double-standard system (where young men's and women's transitions to adult sexuality has been markedly opposed), there are signs, if but very recent, of greater resemblance between young men and women (Castiglioni 2004; Dalla Zuanna and Mencarini 2004; Bozon and Kontula 2014; Minello et al. 2020). In line with a double standard, we might expect more precocious trajectories to involve primarily male youth, whereas the more cautious and traditional ones would be prevalently female. We endeavour to verify whether this association between gender and the pathways to adult sexuality has indeed seen any change in recent years in Italy, reflected in a progressive convergence in the trajectories of young men and women.

The paper is organised as follows. Section 2.1 describes the complex process of sexual development and confirms the necessity of considering not only first sexual intercourse but also multiple life-course events in order to better understand youths' affective and sexual lives. Section 2.2 turns to the transition to adult sexuality by gender, an important factor in this process, particularly in a context such as Italy's. Section 3 presents our research questions, followed, in Section 4, by a discussion of the data used: a sample obtained from two surveys conducted in Italy in 2000–2001, from the Sexuality of Italian Students (SIS), and in 2017, from the Sexual and Emotional LiFe of Youth (SELFY). Section 5 presents the analytical strategy, the results of which are reported in Section 6. We first show the outcomes of the sequence analysis and subsequent cluster analysis (6.1), and then those of the multinomial logistic regression exploring the effect of gender and birth cohort on the probability of belonging to a specific trajectory (6.2). Section 6.3 offers several robustness checks. Finally, Section 7 concludes.

2. Background

2.1 The process of sexual development

The focus of many studies on sexual development has been first sexual intercourse. Yet, from a life-course perspective, sexual development is a more complex process that includes other events, such as initial, incomplete sexual experiences (Carpenter 2015). Moreover, both sexual and romantic development should be considered, as they are closely related (Thornton 1990). In fact, romantic relationships constitute the primary context for sexual activity (Furman and Shaffer 2003). For many adolescents, such relationships precede the beginning of sexual life, then develop into opportunities to engage in first incomplete sexual experiences, and ultimately first sexual intercourse (Thornton 1990). Generally, both romantic and (incomplete or complete) sexual experiences are important components of adolescents' social maturation and can impact behaviour into early adulthood (Connolly and McIsaacs 2009; Lewis, Marston, and Wellings 2013; Rauer et al. 2013).

Although the link between romantic relations and sexual initiation may seem evident, most studies continue to focus on sexual debut, where involvement in a romantic relationship is solely a predictor of having ever engaged in sexual intercourse (Van Oss Marín et al. 2006; Manlove et al. 2012). Meanwhile, the initial phases of affective and sexual trajectories are often downplayed (van de Bongardt et al. 2015). This is rather surprising, given the emphasis of the life-course perspective on understanding how different processes are sequenced and interrelated (Elder 1988).

Previous studies embracing a life-course perspective tend to focus on the United States, often through use of different waves of longitudinal samples. They generally find that the stages of adolescent affective and sexual development are clearly defined and follow a pattern: First sexual intercourse is usually experienced later than a first romantic relationship, and different levels of intimacy are expected depending on the dating stage (Roche and Ramsbey 1993). Broadly speaking, such research has identified a progression from less to more intimate experiences (Haydon et al. 2012; Smith and Udry 1985). This progression can be described as a sexual trajectory, dependent on age, where the steps and timing may differ according to, for example, level of education, ethnicity, or whether the adolescents have behavioural issues or are sexual minorities (de Graaf et al. 2009; Williams, Connolly, and Cribbie 2008). The timing of the events may also vary: Youth who enter into steady relationships earlier are also more likely to be sexually active at younger ages (Thornton 1990; O' Sullivan et al. 2007).

Gender has also been shown to be a relevant factor in various attitudes and behaviours related to sexuality (Reese et al. 2014). Broadly, early sexual initiation continues to be seen as less permissible for females than for males (Crawford and Popp

2003) and, as a consequence, young males are usually both more precocious than females (Regan et al. 2004) and more likely to engage in risky sexual behaviours (Moilanen et al. 2010). Men are also more likely to report having had their first sex with a casual partner than are women (Martinez, Copen, and Abma 2011; Minello et al. 2020). Romantic and sexual trajectories may accordingly also differ by gender. For example, Wesche and colleagues (2017) create latent classes of romantic and sexual behaviours among US college students and report a higher percentage of women in the most conservative sexual behaviour group, whereas the class with disconnected romantic and sexual lives is male dominated. Similarly, Kahn and Halpern (2018) identify a higher prevalence of US male adolescents among early/atypical initiators of sexual debut.

Finally, as sexual mores have become more tolerant in recent decades, birth cohort likely also matters in the sequence and spacing of events related to sexuality (Caltabiano, Castiglioni, and De Rose 2020). In some countries, age at first sexual experiences and at intercourse has decreased between successive birth cohorts over the past decades, such as in the Scandinavian countries and in Britain, with the spacing between these two events consequently narrowing. In other countries – namely, the United States and Asian countries – age at first intercourse has instead remained stable or even increased (for Scandinavia, see Hansen et al. 2020; for the United Kingdom, see Lewis et al. 2017; for the United States, see Ethier, Kann, and McManus 2018; Twenge, Sherman, and Wells 2017; for a worldwide review, see Bongaarts, Mensch, and Blanc 2017; Inchley et al. 2016, 2020). Moreover, birth cohort may interact with gender: In recent cohorts, young women’s sexual behaviours have shown dramatic changes, tending to converge with those of young men, as Bajos and her colleagues (2010) find for France.

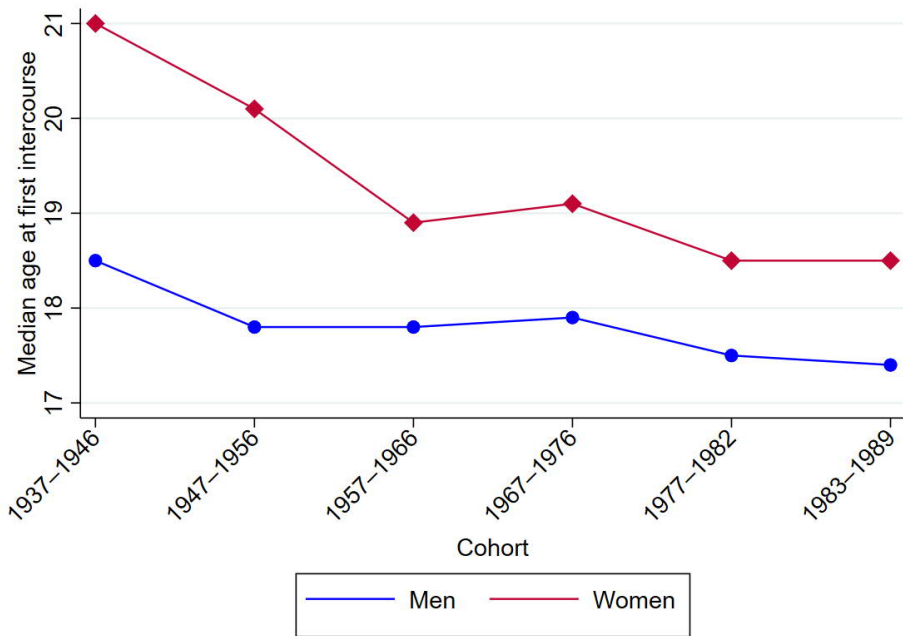
2.2 The transition to adult sexuality for young Italian men and women

The beginning of affective and sexual life is not equal among genders in many societies, today as in the past (Bozon 2003). In this perspective, Italy offers a particularly interesting context for study. In contrast to Western and Northern Europe’s more egalitarian structure, this country has long been characterised by a double-standard system (Bozon and Kontula 2014; Minello et al. 2020; Caltabiano, Castiglioni, and De Rose 2020).

In such a system, the transition to adult sexuality is typically different for men and women. Before the 1970s, first sexual intercourse was a rite of passage from adolescence to adulthood for Italian males, often experienced before having a (later) first romantic relationship. First intercourse typically occurred with an older and more experienced woman, sometimes a prostitute (Barbagli, Dalla Zuanna, and Garelli 2010). For women, sexuality was instead closely guarded and romantic relationships rarely permitted by

parents (Caltabiano, Dalla Zuanna, and Rosina 2006), with the exception of the future spouse. First intercourse usually took place upon marriage or with their husband-to-be just before wedding for a majority of women (Fabris and Davis 1978). Finally, in this double-standard context, the median age at sexual debut considerably differed between men and women: around 18.5 for the oldest cohorts of males born in 1937–1946 and about 21.0 for their female counterparts (see Figure 1).

Figure 1: Median age at first sexual intercourse by cohort and gender, Italy



Source: Own elaboration on Caltabiano (2013: 45).

When the sexual revolution of the 1960s reached Italy, there occurred a slow convergence in the age at first sexual intercourse between men and women (Caltabiano, Dalla Zuanna, and Rosina 2006; Caltabiano 2013; see also Figure 1). The key factor in this shift was a detachment of sexuality from family formation for women, who began experiencing sexual debut before marriage (though usually still within a romantic relationship). Meanwhile, greater numbers of men had their first sexual intercourse with a romantic partner (Castiglioni 2004; Caltabiano 2013). Yet, non-traditional situations,

where sexual debut for young women was disconnected from a romantic relationship, remained uncommon (Billari and Ongaro 2004; Caltabiano 2007).

Up until the 2000s, first romantic relationships and first sexual experiences continued to be quite distanced events for young women, with sexual experiences usually following the first serious relationship. In contrast, many young men still had their first sexual experience before having a stable partner (Billari and Ongaro 2004; Dalla Zuanna and Mencarini 2004). Thus, until very recently, more traditional behaviours continued to be practiced in Italy. This was coupled with a relatively higher median age at first intercourse compared to young people living in Central and Northern European countries (Minello et al. 2020), despite the fact that the spacing between first sexual experiences and complete sexual intercourse had started to narrow (Billari and Ongaro 2004).

Finally, the decade of the 2010s saw a new pattern, converging towards the ‘egalitarian regime,’ where young Italians’ sexual experiences, and sometimes intercourse, increasingly preceded the first romantic relationship not only for young men but also for a non-negligible number of young women born in the 1990s, together with a lower age at first sexual experiences (Minello et al. 2020).

3. Research questions

Despite the importance of taking a holistic view of the process of romantic and sexual development, most previous work has focused on just one event, usually first intercourse. What is more, the literature has tended to concentrate on the typical pathway to sexual debut for young men and young women. Accordingly, one male and one female trajectory are described as the only feasible paths, whereas those deviant or less common are either considered less relevant or simply ignored. In addition, the double-standard and egalitarian systems have historically been viewed as distinct archetypes. Yet there is reason to believe that a ‘typical’ trajectory of affective and sexual development is too restrictive. The destandardisation of the life course – namely, the end of a standard path of transition to adulthood, with fixed milestones at identical ages for everyone (Brückner and Mayer 2005; Widmer and Ritschard 2009) – means greater complexity in the pathways to sexual debut. This might be particularly true in a country like Italy, where the double-standard system has been losing ground in favour of an egalitarian system. In other words, the typical pathway to sexual debut for young men and young women could indeed be vanishing, replaced by a greater variety of trajectories. Given these premises, we investigate young Italian people’s romantic and sexual life trajectories by gender and birth cohort. In particular, we aim to answer the following research questions.

Our first research question asks, What different pathways characterise young Italians’ affective and sexual life debut? In exploring this question, we seek to shed light

on the process of affective and sexual development and the potentially different trajectories among Italian youth.

Second, we aim to discern whether and to what extent men are overrepresented in less traditional and more precocious sexual pathways, and conversely, women in those that are more traditional and less precocious. Along with gender differences, we are also interested in any eventual cohort differences – particularly the extent to which some trajectories may be over-represented among older birth cohorts and others among the younger cohorts, thereby suggesting the emergence of new patterns of behaviour in recent years. We seek to verify whether more precocious affective and sexual life trajectories are associated with the youngest birth cohorts and more prudent trajectories with the oldest cohorts. Accordingly, our second research question asks, Does the propensity to belong to different affective and sexual life trajectories vary by young people's gender and birth cohort?

Finally, there is growing evidence that the sexual lives of young people are converging between the two genders. We accordingly explore whether and to what extent a higher propensity of belonging to more precocious trajectories for men tends to disappear among the youngest cohorts, or, conversely, whether the higher propensity of belonging to more conservative trajectories for women decreases among the more recent cohorts, thus narrowing the differences between young men and women. Put differently, we endeavour to verify whether and how the link between gender and sexual pathway has changed for the youngest cohorts. Accordingly, our third and final research question asks, Over time has the association between youths' gender and affective and sexual life debut pathway changed?

4. Data

4.1 The SIS and SELFY surveys

The analysis of young Italians' sexual biographies is based on data gathered from two surveys: the SIS (Dalla Zuanna and Crisafulli 2004) and the SELFY (Dalla Zuanna et al. 2019). Conducted in 2017, the SELFY survey replicates the SIS survey, carried out in late 2000 and early 2001.⁴ Both investigate the sexual and emotional life of youth, specifically those attending undergraduate courses in economics and statistics at Italian public universities.

The sampling plan was the same in 2000 and 2017. Italy was divided into 14 macro-regions; then, for each macro-region, the list of undergraduate degree courses in

⁴ For brevity, we hereafter refer to the year of this survey as '2000.'

economics and statistics in public universities was obtained using official data from the Ministry of Education. In order to adequately represent the overall number of students enrolled in these programmes, for each macro-region a certain number of courses was selected and included in the sample. From among this selection, all the students attending one of the compulsory courses were surveyed during a class session. For both 2000 and 2017, the data were post-stratified to obtain representative results at the national level (see Dalla Zuanna et al. 2019 for more information on the survey methodology and respondent characteristics). Overall, 4,998 students were surveyed in 2000 and 8,094 in 2017 (13,092 overall). After data entry, 4.7% of the questionnaires in 2000 and 3.1% in 2017 were eliminated because they were either not earnestly completed or had a large majority of answers missing. The final dataset includes 4,762 questionnaires for 2000 and 7,842 for 2017 (12,604 overall).

Note that the sexuality of economics and statistics students is not representative of all youth in Italy. As shown by Dalla Zuanna and colleagues (2019), it is markedly delayed and less intense compared to their less educated peers, and slightly delayed and less intense relative to university students enrolled in other fields of study. These authors observe and compare several key indicators of the sexual behaviour of the 2000 and 2017 samples with identical indicators calculated for people aged 20 to 24 covered by a national survey on sexual behaviour in 2006 (Barbagli, Dalla Zuanna, and Garelli 2010). In this study, the proportion of young people having had their first sexual intercourse before 16 years of age in this latter sample was markedly lower among those who were still studying at university or had just graduated (12% both for males and females, in line with that in our sample) relative to those with fewer than ten years of schooling (30% males, 27% females). Panatto and colleagues (2012) and Poscia and colleagues (2015) obtain similar results (see also Halpern et al. 2000 and Olesen et al. 2012 for comparable findings in the United States). Furthermore, in comparing the SIS and SELFY data with those for a small sample (451) of political science undergraduate students – a field of study that is traditionally seen as less demanding than statistics and economics – Dalla Zuanna and colleagues (2019) find a higher proportion of students with precocious sexual intercourse among students of political science.

4.2 The sample

In our sample, we excluded the 3,817 students from the 12,604 interviewed in both surveys who were under the age of 20 at the time of the interview. This allowed us to

reconstruct full sequences up to 20 years old.⁵ Moreover, we dropped 374 students (4.2% of 8,787 interviewees aged 20 and over) from the sample either due to a missing value relative to first incomplete sexual experience (1.1%) or because they declared having had first sexual intercourse before their first incomplete sexual experience (3.1%). An additional 170 students (1.9%) were not included in the sample because they did not report the date of their first sexual intercourse.

Thus, the final sample comprises 8,243 students aged 20 and over, 3,012 of whom were interviewed in 2000 (42.0% men) and 5,231 (54.4% men) in 2017. First complete sexual intercourse and the first romantic relationship were investigated in the surveys by asking students whether they had ever experienced either of these two events,⁶ and for those answering in the affirmative, their date (month and year). Participants were also asked about whether and when they had experienced their first incomplete sexual experience (in completed years).⁷ We imputed the time of occurrence of their first incomplete sexual experience (for each respondent, we randomly imputed the number of months – from 0 to 11 – of the corresponding age), and subsequently computed the month and year of the first incomplete sexual experience according to the respondents' date of birth (month and year).

In our sample, 981 students (11.9%) declared having had a first romantic relationship but did not report the date. For these students, we imputed the age (in number of months since age 11) at which they experienced the first romantic relationship through a truncated regression, separately for young men and women. The restricted age range was given by the lower limit (–11 months, corresponding to 10 years and 1 month of age) and upper limit (164 months, corresponding to 24 years and 8 months of age), identified within the sample of respondents to this question. The covariates included in the truncated regression are students' age class in which they had their first sexual incomplete experience (if occurred); students' age class in which they had their first sexual intercourse (if occurred);⁸ if they have friends of the same sex or of the opposite sex, smoke, go to discotheque, practice sport, and are satisfied with their body (all the variables are fixed to when they were aged 14 to 15; except the covariate on friends,

⁵ Reconstructing sequences up to 20 years old permits us to observe youths' sexual and affective trajectories for a longer period than stopping sequences at 18 or 19 in such a way as to detect (at least partly) those students who experienced the event(s) later than median ages.

⁶ Specifically, students were asked: "Have you ever had complete sexual intercourse? When did this happen for the first time?" [Month; Year] (henceforth, for the sake of brevity, sexual intercourse) and "Have you ever had a romantic relationship; that is, have you ever been together with a person, even without complete sexual intercourse? When did your first relationship begin?" [Month; Year].

⁷ Specifically, students were asked: "Have you ever had a sexual experience of some kind that was not complete intercourse (such as heavy kissing, intimate fondling, or other)? How old were you the first time this happened?" [Age].

⁸ For both covariates concerning the age class in which a student had a first incomplete sexual experience/sexual intercourse, a residual category indicates the non-occurrence of the event before the interview date.

which was nominal with six categories, all others were included as ordinal variables with three or four categories); type of high school attended; macro-area of residence during high school; and mothers' birth cohort. We included a longer list of covariates in the truncated regression imputation, but for our purposes we exclude those that proved to be not significant.

Table 1 shows the most relevant ages (25th percentile, median, and 75th percentile) at which students in the sample had their first romantic relationship, their first incomplete sexual experience, and their first sexual intercourse, according to gender and year of interview. The table also distinguishes the percentage of students who had experienced the three different events by a given age (15 to 20). Young men tend to be more precocious in their first incomplete sexual experience and first sexual intercourse with respect to young women. Meanwhile, young women's age at first romantic relationship is lower than that of young men (except for at the 25th percentile). Compared to 2000, in 2017 young Italians tend to have experienced all three events at relatively younger ages (with a few exceptions). Moreover, the differences between men and women are fewer in 2017, especially with regard to first sexual intercourse.

Table 1: Age at 25th percentile, median age, and age at 75th percentile at first romantic relationship, at first incomplete sexual experience, and at first sexual intercourse. Percentage of students who had experienced first romantic relationship/first incomplete sexual experience/first sexual intercourse by the age of 15 to 20. By gender and interview date

	2000	2017	2000	2017	2000	2017
	First romantic relationship		First incomplete sexual experience		First sexual intercourse	
Age 25th percentile						
Males	14.3	13.7	14.1	14.3	17.1	16.4
Females	14.4	13.8	14.8	14.9	17.6	16.4
Median age						
Males	16.5	15.9	15.6	15.8	18.8	18.0
Females	16.1	15.6	16.3	16.2	19.3	18.1
Age 75th percentile						
Males	19.2	18.8	17.3	17.2	N.D.	19.8
Females	18.3	18.1	18.1	17.7	N.D.	20.1
% of students who had experienced the event by age 15						
Males	32.0	39.9	39.3	36.7	4.8	8.1
Females	34.0	40.8	26.4	26.0	2.5	6.1

Table 1: (Continued)

	2000	2017	2000	2017	2000	2017
	First romantic relationship		First incomplete sexual experience		First sexual intercourse	
% of students who had experienced the event by age 16						
Males	43.0	50.4	55.4	54.1	12.9	17.7
Females	47.8	54.5	42.8	45.7	7.2	17.0
% of students who had experienced the event by age 17						
Males	55.1	60.6	72.5	73.0	23.3	32.7
Females	60.9	65.9	60.7	66.4	16.8	33.3
% of students who had experienced the event by age 18						
Males	64.0	69.6	80.2	83.1	37.5	49.0
Females	72.5	74.0	73.2	78.5	29.6	48.0
% of students who had experienced the event by age 19						
Males	73.3	76.2	86.8	88.7	52.4	66.0
Females	79.8	79.8	83.1	87.3	44.5	64.0
% of students who had experienced the event by age 20						
Males	79.7	79.9	89.4	90.8	65.4	76.2
Females	85.0	82.7	87.6	90.3	56.1	74.3

Note: Own elaboration on SIS and SELFY data.

5. Methods

In order to describe the different affective and sexual life-course trajectories of young people (our first research question), we employed a sequence analysis with an optimal matching (OM) algorithm (Abbott 1995) and subsequent clustering. This allows us to consider the affective and sexual development of youth as a complex event, defined not only by the first sexual intercourse but also by the first romantic relationship and the first incomplete sexual experience. Specifically, we take into account the sequencing and timing of these three events. Having reconstructed the sequences and identified various clusters, we estimated multinomial logistic regressions to analyse the effect of a student's gender and birth cohort on the probability of belonging to a specific trajectory (our second research question). Lastly, in our multinomial logistic models, we included an interaction term between gender and birth cohort to explore whether and how the link between individual's gender and sexual pathway has changed among the youngest cohorts (our third research question).

5.1 Sequence analysis

In order to identify the various sexual life-course profiles of young men and women, we carried out a sequence analysis with an OM algorithm as a dissimilarity measure and subsequent clustering of sequences. As a first step, we reconstructed the sequences of young men and women aged 20 or more at interview according to three time-varying variables: whether students had experienced their first romantic relationship, whether they had had their first incomplete sexual experience, and whether they had had their first sexual intercourse. All statuses are absorbing in that once youths have experienced an event of interest (e.g., they had their first sexual intercourse), they no longer change status. What is more, as incomplete sexual experience always precedes sexual intercourse, there are six possible states in the sequences (note that we omit the word ‘first’ for sake of synthesis – e.g., ‘no sexual intercourse’ reads ‘no first sexual intercourse’):

- 1) No romantic relationship, no incomplete sexual experience, and no sexual intercourse.
- 2) Romantic relationship, no incomplete sexual experience, and no sexual intercourse.
- 3) No romantic relationship, incomplete sexual experience, and no sexual intercourse.
- 4) Romantic relationship, incomplete sexual experience, and no sexual intercourse.
- 5) No romantic relationship, incomplete sexual experience, and sexual intercourse.
- 6) Romantic relationship, incomplete sexual experience, and sexual intercourse.

Each sequence covers the adolescent period from age 11 to 20 with a monthly observation unit, totalling 108 months of observation.⁹

In a second step, having constructed the sequences, we evaluated the distance matrix among sequences through an OM algorithm, with constant substitution costs (Studer and Ritschard 2016; Raab and Struffolino 2020). We then clustered similar biographies using Ward’s algorithm to create a universe of typical or ‘ideal-type’ affective and sexual life trajectories, according to the OM distance matrix (Aassve, Billari, and Piccarreta 2007). As a cluster quality measure, we followed widely employed measures in sequence analysis: the average silhouette width, which measures the coherence of the assignment of each sequence to a cluster and thus provides a way to assess the optimal number of clusters, and the point biserial correlation, which measures the ‘capacity’ of the clustering to reproduce the distances (Studer 2013). In our context, both average silhouette widths

⁹ The sequences stop just before students are 20 – namely, when they are 19 years, 11 months of age.

and point biserial correlation consistently supported six clusters as the best grouping (e.g., Devillanova, Raitano, and Struffolino 2019; Raab and Struffolino 2020).

As a robustness check, we repeated the cluster analysis using different distance metrics – namely, the dynamic Hamming distance, the Hamming distance, and the OM algorithm with transition substitution costs (see Studer and Ritschard 2016 for a detailed description of the different distance metrics). In all cases, average silhouette widths and silhouette plots showed a worse specification of clusters. Sequence analysis and cluster analysis were performed employing the TraMineR (Gabadinho et al. 2011) and WeightedCluster (Studer 2013) packages of the software R (version 4.0.3).

5.2 Multinomial regression

After having identified the various affective and sexual life pathways (first research question), we estimated multinomial logistic regressions to analyse the effect of gender and birth cohort on the probability of belonging to a specific trajectory through a stepwise procedure (see Table A-1 in the Appendix for model results).

Recall that our second research question asks whether the propensity of belonging to different affective and sexual life trajectories varies by young people's gender and birth cohort. In an effort to respond to this query, we model the probability of being associated with a specific trajectory, where we include as key covariates students' gender and birth cohort. We divide the latter into four groups – two for the SIS data and two for the SELFY data – in such a way as to reduce as much as possible any unbalance of their numerosity in each group.¹⁰ As a result, the four groups consist of students born in the following calendar years: 1975–1979 and 1980–1981 (both formed by university students interviewed in 2000–2001), and 1991–1995 and 1996–1997 (both formed by university students interviewed in 2017).

Our third research question asks whether the association between gender and young people's affective and sexual life pathways has changed over time – namely, whether female students in the youngest cohorts are associated with more precocious emotional and sexual life trajectories than their older counterparts or, similarly, whether the propensity of being associated with more precocious trajectories for men tends to disappear among the youngest cohorts. To answer this question, we included an interaction term between students' gender and birth cohort in the multinomial logistic regression.

Our model on the probability of belonging to a specific cluster also includes several control variables (added through a stepwise procedure), identified in the literature as

¹⁰ In the SIS data, the majority of students interviewed were born in 1980 (15.6% of the overall sample), while in the SELFY data, most were born in 1996 (31.4% of the overall sample).

playing a role in young people's sexual lives (see, for example, Forste and Haas 2002; Zimmer-Gembeck, Siebenbruner, and Collins 2004; Boislard and Poulin 2011; Parkes et al. 2011; White and Warner 2015). So as to avoid issues of reverse causation, these all precede or are nearly concomitant with the beginning of students' sexual sequences. In the first step, we included in the model our key covariates, gender and birth cohort (Model A), followed by the addition of two other individual-level covariates – student's final lower-secondary education score (as a quantitative variable that varies from the minimum score of six up to the maximum of ten) and type of high school attended (lyceum, technical, or vocational) (Model B). We then included variables about life experiences, specifically if students smoked when they were 11 to 13 years old, if students went to discotheques when they were 11 to 13 years old (both dichotomous variables), and the frequency of church attendance when they were 13, with five categories ranging from never to once a week or more (Model C). We further added the following family background variables: highest level of education among the two parents (at most lower-secondary education, upper-secondary education, or tertiary education); a dichotomous variable about the mother's work when respondents were 11 to 13 years old; and if the parents were married, cohabiting, or separated when students were 11 (Model D). We then added a contextual covariate consisting of the macro-area of residence during high school, differentiating between Northern, Central, or Southern Italy, or abroad (Model E). In the last step, and in an effort to answer our third research question, we included an interaction term between gender and birth cohort (Model F).¹¹

6. Results

6.1 Young people's affective and sexual life pathways

By clustering students' sequences, we identified six distinct sexual ideal types of young men and women. Table 2 lists these six detected clusters¹² and provides the distribution of students by gender and year of interview within each category. In what follows, we provide a description of these clusters, complemented by Figure 2, which shows the state distribution plot of students' affective and sexual life-course trajectories (namely, the distribution of states within the cluster at each month of the observation period) from age 11 (corresponding to time = 0) to age 20 (time = 107), and by Table 3, which shows some descriptive statistics for each cluster.

¹¹ Using a likelihood-ratio test, we verified that the inclusion of the interaction term improved our model ($\chi^2_{(15)} = 29.21$, p -value = 0.0151).

¹² For each cluster, we opted for a label that recalls the key characteristics of the given affective and sexual life-course trajectory.

Table 2: Clusters of students' affective and sexual life courses. Students' absolute and percentage frequencies (by column) of clusters by gender and year of interview

Cluster label	2000				2017			
	Men		Women		Men		Women	
	abs.v.	%	abs.v.	%	abs.v.	%	abs.v.	%
The benchmark	174	13.8	363	20.8	408	14.3	435	18.2
The forerunners	405	32.0	461	26.4	1,008	35.4	813	34.1
The late starters	134	10.6	189	10.8	236	8.3	198	8.3
Romantic love	110	8.7	215	12.3	434	15.3	427	17.9
Sexuality explorers	251	19.9	374	21.4	361	12.7	251	10.5
Sex without commitment	190	15.0	146	8.4	397	14.0	263	11.0
Total	1,264	100.0	1,748	100.0	2,844	100.0	2,387	100.0

Note: Own elaboration on SIS and SELFY data.

The first cluster, 'the benchmark,' is formed by students who experienced all three events in the 'traditional' order (first a romantic relationship, then an incomplete sexual experience, and finally sexual intercourse). The spacing between one event and the next is quite standard, with students having had a first romantic relationship at age 17.3 and first sexual intercourse at age 18.8 (median ages; see Table 3). Overall, 1,380 students belong to this cluster, characterised by both a prevalence of women and higher percentages of students interviewed in 2000.

The second cluster, labelled 'the forerunners,' resembles the benchmark cluster, except for the fact that each event occurs earlier in time. It is similarly formed by students who had a first romantic relationship, then a first incomplete sexual experience, and finally first sexual intercourse, but at a median age of 16.5 (see Table 3). Overall, 2,687 students belong to this (most numerous) cluster. There is a slight prevalence of men, and the percentage distribution increased by 6% from 2000 to 2017.

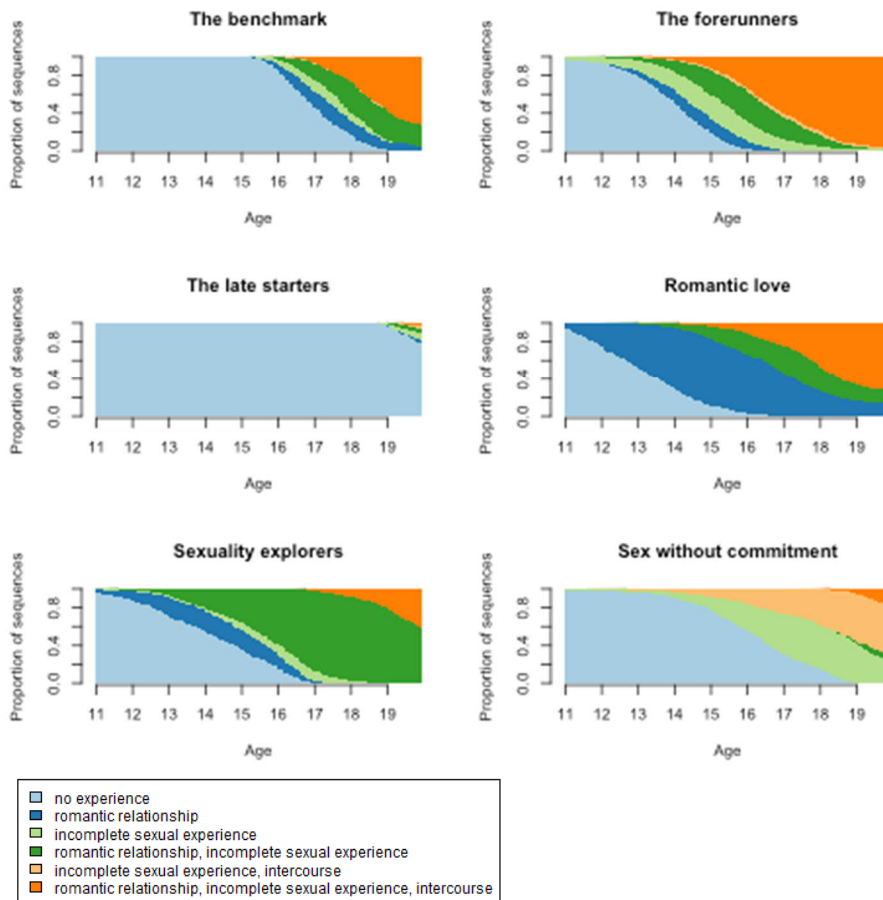
The third cluster, 'the late starters,' is characterised by similar proportions of men and women and a slight decline in 2017. Here, the three events are delayed: At the age of 20, only 3.0% of young people had experienced all three events, and just 5.7% had had first sexual intercourse, whereas 78.9% had neither had a romantic relationship nor sexual intercourse (see Table 3).

A considerable period of time passes between first romantic relationship and sexual experience in the 'romantic love' cluster, though the former occurs at a relatively young age (median age of 13.1, the youngest age among the clusters, and earlier than the median age of 14.0 for the overall sample). Meanwhile, first sexual intercourse is anticipated by just a few months (median age of 18.2, compared to 18.6 for the overall sample). This

predominantly female cluster sees a slight increase in 2017 for both men’s and women’s distributions.

The fifth cluster, called ‘sexuality explorers,’ is formed by students who delayed first sexual intercourse (median age of 20.4: see Table 3) relative to their first incomplete sexual experience (median age of 15.3). While here the two genders are very balanced, this pattern was more common in 2000.

Figure 2: State distribution plots of clusters of students’ affective and sexual life courses



Note: Own elaboration on SIS and SELFY data.

Finally, the 'sex without commitment' cluster is formed mainly by men, and to a lesser extent by women who had their first incomplete sexual experience and intercourse without being in a romantic relationship (some of whom had a later first romantic relationship). At the age of 20, only 24.9% of this group had been in a romantic relationship, yet 70.4% had had first sexual intercourse and all had had an incomplete sexual experience (see Table 3). This largely male cluster comprises 996 students, though while the percentage of men is similar in the two surveys, the female component slightly increases in 2017.

Table 3: Median age at each event and percentage of students who had experienced each event by the age of 20 by cluster

Cluster label	N	Median age			% of students who lived the event by the age of 20		
		First romantic relationship	First incomplete sexual experience	First sexual intercourse	First romantic relationship	First incomplete sexual experience	First sexual intercourse
The benchmark	1,380	17.25	17.5	18.75	100.0	95.2	72.3
The forerunners	2,687	14.92	14.5	16.5	96.8	100.0	97.8
The late starters	757	N/A	N/A	N/A	11.8	18.0	5.7
Romantic love	1,186	13.04	16.83	18.17	100.0	86.9	73.0
Sexuality explorers	1,237	14.58	15.25	20.42	100.0	100.0	41.5
Sex without commitment	996	N/A	16.25	18.75	24.9	100.0	70.4

Note: Own elaboration on SIS and SELFY data.

In sum, there are number of different profiles when it comes to students' affective and sexual life-course trajectories, confirming the need to consider sexual development as a complex, differentiated process.

6.2 How gender and birth cohort shape young people's affective and sexual life profiles

For ease of interpretation, we estimated predicted probabilities of belonging to a given trajectory and present them graphically. Full model results are provided in the Appendix (Table A-1).

Figure 3 shows confidence intervals (CIs) of predicted probabilities of belonging to the six clusters according to student gender (Figure 3a) and birth cohort (Figure 3b) deriving from Model E (complete model, without the interaction term between gender and birth cohort).

Specifically, we see in Figure 3a that the male and female CIs of the predicted probabilities do overlap in two clusters: the late starters and sexuality explorers. These two sexual trajectories do not seem to be specific based on gender, showing 'typical' transitions to adult sexuality for both sexes (note that these two clusters account for 24.2% of the total sample). While the two CIs do not overlap in the romantic love cluster, they are extremely close to one another. Meanwhile, for the remaining three profiles (representing 61.4% of the overall sample), the CIs of predicted probabilities do not overlap for male and female students. The benchmark profile has a slightly unbalanced cluster composition in favour of young women. In contrast, for both the forerunners and sex without commitment clusters, young men have a higher predicted probability of being associated with these trajectories than do young women. These results suggest that gender differences do characterise the trajectories of affective and sexual development of most university students. Moreover, certain profiles do not display the gender divide typical of the double-standard system.

When looking at the differences by birth cohort (Figure 3b), we do not observe any meaningful pattern over time for the benchmark profile, with a non-linear trend and overlapping CIs. The forerunners and the romantic love clusters instead show a clear divide between the older (between 1975 and 1981) and younger (between 1991 and 1997) birth cohorts, with CIs that do not overlap between the two groups (but overlapping CIs for the first two groups and the last two groups of birth cohorts, respectively). An increasing trend is also visible, with younger cohorts having a higher predicted probability of belonging to these clusters. The late starters profile displays a contrast between the oldest cohort (1975–1979), which has the highest predicted probability of belonging to this cluster, and the two youngest groups of birth cohorts (1991–1997), whose CIs overlap one another but not those of the oldest cohort. Thus, while the most cautious pathway to adult sexuality seems to be more common among the oldest birth cohorts, it has recently lost strength, showing a decreasing trend.

Finally, the last two profiles, sexuality explorers and sex without commitment, do not show any meaningful pattern over time, with a non-linear trend and just a few overlapping CIs. In sum, their composition does not seem to be associated with a birth cohort. These findings suggest that new patterns have gained ground in recent years while the relevance of others has diminished. Though, these new patterns do not always consist of more precocious trajectories, as one might expect.

Figure 3: Results from Model E: Predicted probabilities of belonging to the six clusters according to student gender (Fig. 3a) and birth cohort (Fig. 3b). CI 95%

a) By gender

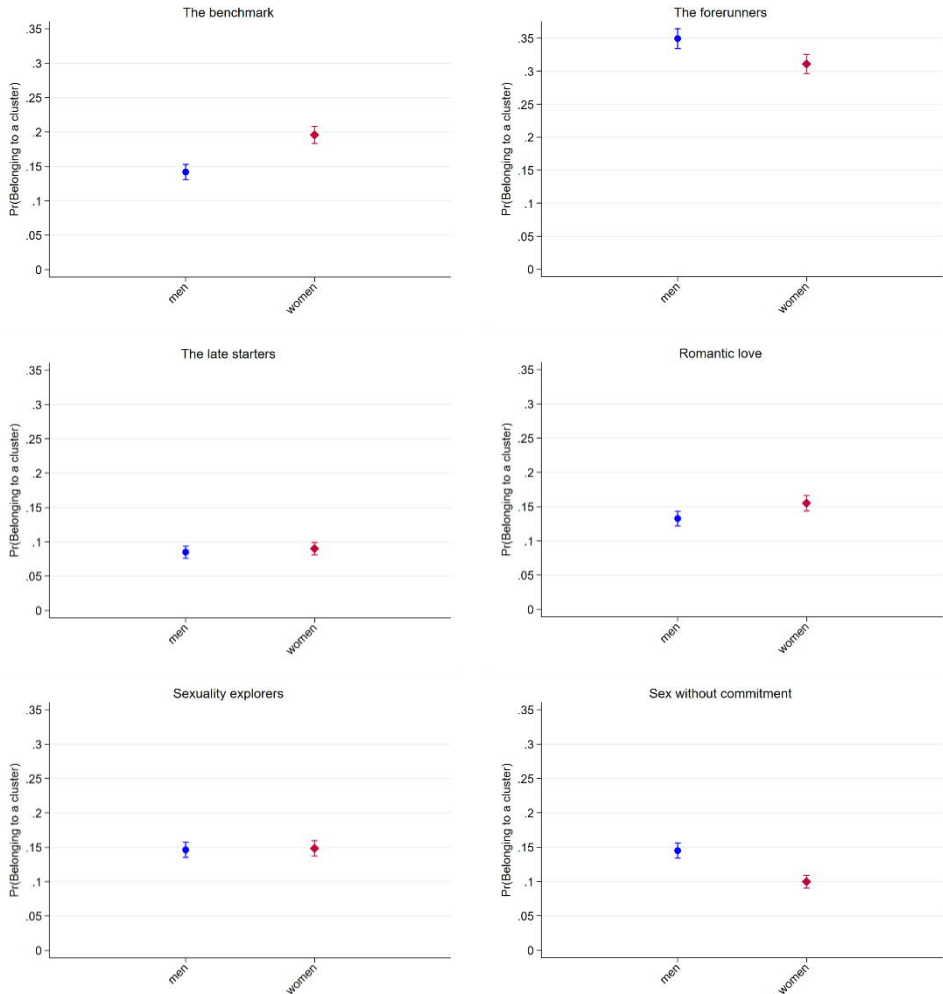
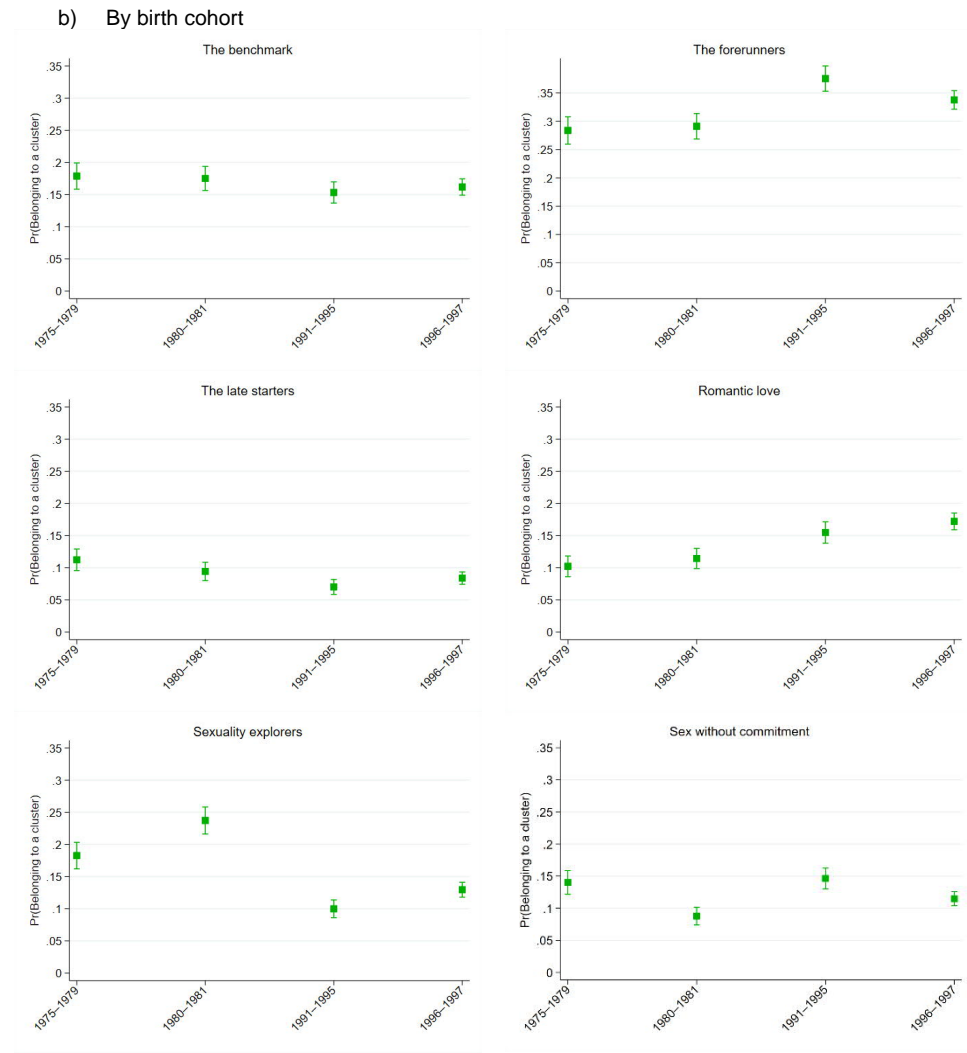


Figure 3: (Continued)

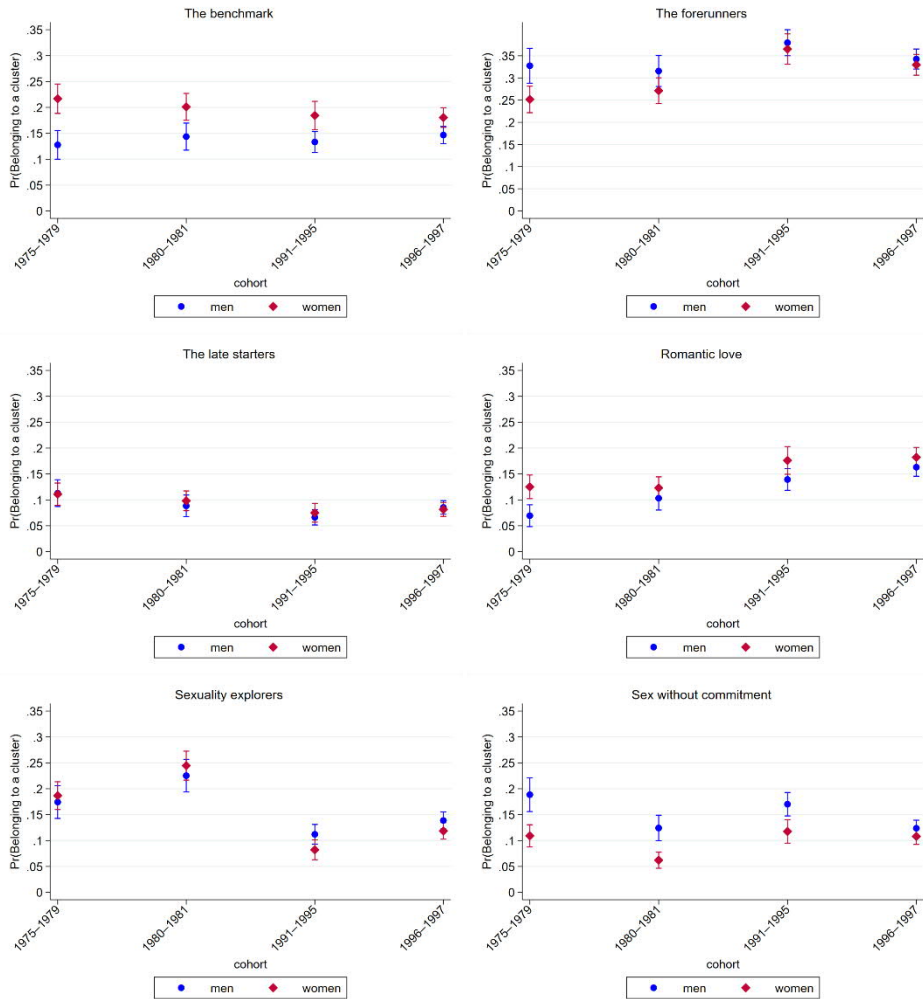


Note: Own elaboration on SIS and SELFY data. To estimate predicted probabilities, gender (Figure 3a) and birth cohort (Figure 3b) are allowed to vary, while gender (Figure 3b), birth cohort (Figure 3a), student's final lower-secondary score, type of high school attended, frequency of church attendance when student was 13, smoking when student was 11 to 13, attendance of discotheque when student was 11 to 13, parental highest level of education, mother's work when respondent was 11 to 13, parental partnership when student was 11, and macro-area of residence during high school are kept at the mean value.

Figure 4 shows CIs of predicted probabilities of belonging to the six clusters according to student gender and birth cohort deriving from Model F (complete model with interaction term between gender and birth cohort – the third research question). For the (female-dominated) benchmark profile, the CIs of predicted probabilities overlap between men and women for the youngest birth cohort only, whereas they do not overlap for the remaining birth cohorts. Meanwhile, instead, the CIs of predicted probabilities for the forerunners and romantic love clusters do overlap between young men and young women starting from the 1980–1981 birth cohort. Thus, while in the past the forerunners profile was male dominated and the romantic love cluster was female dominated, both clusters have become more equal between genders in terms of their composition. The late starters and sexuality explorers profiles are the only clusters where all the young men's and women's CIs overlap for all birth cohorts, thus indicating no change in composition over time for these groups. Finally, as already observed in Figure 3a, sex without commitment is clearly male dominated across all birth cohorts. That said, there is a narrowing between young men's and women's CIs of predicted probabilities among the most recent cohorts, which even overlap for those born in 1996–1997. This pattern implies a changing composition over time within this group, with the male prevalence seeming to disappear among the most recent cohorts.

In sum, these results suggest that differences between young men's and women's affective and sexual life trajectories have lessened over time. Indeed, we see an overlap between men and women in all the clusters for students born in the most recent years.

Figure 4: Results from Model F: Predicted probabilities of belonging to the six clusters according to student gender and birth cohort. CI 95%



Note: Own elaboration on SIS and SELFY data. To estimate predicted probabilities, gender and birth cohort are allowed to vary, while student's final lower-secondary education score, type of high school attended, frequency of church attendance when student was 13, smoking when student was 11 to 13, attendance of discotheque when student was 11 to 13, parental highest level of education, mother's work when respondent was 11 to 13 years old, parental partnership when student was 11, and macro-area of residence during high school are kept at the mean value.

6.3 Additional analyses: Robustness checks

As mentioned above, 981 students (11.9%) did not report the date of their first romantic relationship. To include them in our sample, we imputed their age (in months) when the event occurred.

To test this decision, we carried out a robustness check, repeating our analyses on a smaller sample that excludes those students with a missing value for the date of the first romantic relationship (for brevity, here we report a brief description; the full model results are available in the online supplementary material). We reconstructed the sequences for this reduced sample of 7,262 students and then conducted the sequence analysis with the OM algorithm and cluster analysis using Ward's algorithm, following the same criteria as described in Section 5.1. For comparison purposes, we focus on the solution given by six clusters, which were exactly the same six clusters as obtained in our original sample with discarded missing values, though the percentage of students in each cluster varies slightly (see Table 4).¹³ Finally, we estimated multinomial logistic regressions to analyse the effect of gender and birth cohort on the probability of being associated with a given cluster, as described in Section 5.2.

For the most part, we observe similarities between pathways among the two samples. When (for the sake of brevity) investigating the third research question, a comparison of the results obtained using the imputed sample and the reduced sample shows that two clusters, the late starters and romantic love are identical. All the CI overlaps by birth cohort and gender correspond. The results for the sex without commitment cluster are also extremely similar, though we observe no overlap between men and women among the most recent cohort. In addition, the changing composition over time within this group, where male predominance tends to decline for the most recent cohorts, is also found in both samples.

Likewise, a narrowing between the two genders over time appears in both analyses for the benchmark profile, indicating that this trajectory has become more equal in terms of gender among the most recent birth cohorts, whereas in the past it tended to be female dominated. The forerunners and sexuality explorers clusters instead diverge more markedly in the two samples. In our concluding discussion, we consequently focus on those findings that appear more robust when comparing the imputed and reduced sample analyses.

¹³ Six clusters obtained through OM with constant substitution costs was also the best grouping solution in the reduced sample.

Table 4: Clusters of students' affective and sexual life courses. Students' absolute and percentage frequencies (by column) in the original, imputed sample (8,243 students) and in the reduced sample (7,262 students)

Cluster label	Original sample		Reduced sample	
	abs.v.	%	abs.v.	%
The benchmark	1,380	16.7	1,536	21.2
The forerunners	2,687	32.6	1,265	17.4
The late starters	757	9.2	1,172	16.1
Romantic love	1,186	14.4	665	9.2
Sexuality explorers	1,237	15.0	1,565	21.6
Sex without commitment	996	12.1	1,059	14.6
Total	8,243	100.0	7,262	100.0

Note: Own elaboration on SIS and SELFY data.

7. Conclusion and discussion

The sexual behaviour and attitudes of young Italians have changed in a number of ways over the last two decades: Age at first intercourse has lowered, same-sex relationships have become more accepted, and the number of sexual partners has increased. Moreover, men and women have increasingly come to resemble one another with regard, for example, to contraception, casual sex, and cheating (Minello et al. 2020).

In this paper, we identified and analysed romantic and sexual debut trajectories among a large sample of university students. Specifically, we looked at the sequencing and timing of three key events in the transition to adulthood – first romantic relationship, first incomplete sexual experience, and first sexual intercourse – and discerned six clusters. These range, among others, from the casual sex of the sex without commitment cluster, the precocious behaviour of the forerunners profile, to the postponement of partnering and sexual debut among the late starters. The various clusters reveal the variety of young people's affective and sexual life courses in today's Italy, as well as how these different pathways have changed across cohorts and gender over the last two decades. Similar to findings from the United States (Boislard, van de Bongardt, and Blais 2016), our analyses show that (despite Italy being a very different cultural, social, and normative context) traditionally male-specific and female-specific pathways to sexual debut have increasingly faded and have been replaced by a shortlist of different trajectories that involve both men and women. That said, and as found in the US literature (among others, Wesche, Lefkowitz, and Vasilenko 2017), a more traditional cluster (herein labelled the late starters) has a higher proportion of women, while the opposite is true of the sex

without commitment group. Crucially, the identification of these different pathways confirms the importance of employing a more holistic perspective that goes beyond analyses of first intercourse or a focus on one 'typical' trajectory of affective and sexual development. Indeed, such approaches risk being overly restrictive for accurately describing the contemporary complexity of youths' sexual life debut pathways.

Having identified various pathways characterising young people's affective and sexual life, we next analysed the effect of gender and birth cohort on the probability of being associated with a given trajectory. Our results point to the presence of both a double-standard system and an egalitarian system. That is, gender differences do appear in the affective and sexual development of young Italians. Indeed, having casual sex without being involved in a romantic relationship continues to be a male-dominated trajectory, as also observed in previous studies on the United States (Wesche, Lefkowitz, and Vasilenko 2017; Kahn and Halpern 2018). That said, while in the past this pathway concerned mainly young Italian men, today it involves but a minority of them. This result broadly aligns with prior work on gender differences in Italy (i.e., Billari and Ongaro 2004; Dalla Zuanna and Mencarini 2004), though the lower involvement of young men in this traditional male pattern represents a novel finding. Second, the most conservative pathway, the late starters, does not show any significant difference by gender. Even the typical female trajectory, romantic love, where sexual debut is postponed until later in life, nowadays also concerns a non-negligible number of young men. This rather unexpected result suggests that it is not only women's affective and sexual behaviour that has begun to resemble that of men's (i.e., lowering of the age at sexual debut), but also that men are converging towards behaviour formally considered to be typically female – thus confirming the findings of Minello et al. (2020).

As regards the evolution of these trajectories over time, there are signs that new behavioural patterns have emerged in recent years. Interestingly, this does not always concern more precocious sexual activity, as might be expected. That said, the precocious trajectories are indeed more common among the youngest birth cohorts (results related to the forerunners), while the more conservative pathways (i.e., the late starters) are more widespread among the oldest birth cohorts. Nevertheless, other pathways indicate a surprising diffusion over time, such as romantic love, which shows a slight increasing trend among the recent birth cohorts.

Lastly, even if the double-standard system seems to persist in Italy in some trajectories, the differences between the sexes have narrowed over time. In particular, both the relatively female-specific (the benchmark and romantic love) and male-specific (sex without commitment) profiles have moved towards greater gender equality over time. In sum, a changing relationship in the association between gender and pathways of affective and sexual development has emerged in the last two decades, with decreasing differences between men and women (Minello et al. 2020).

It is worth noting that our sample is formed by university students, who cannot be considered representative of the general population. Indeed, they are a selected population in terms of their sexual lives, with a relatively high median age at sexual debut (over 18). Considerations of the general youth population would likely see differences in the proportion of youth in each cluster, with higher percentages in more precocious trajectories. That said, we believe that the affective and sexual pathways detected in our sample can be considered as relevant to the larger population.

Moreover, our data do not allow us to discern individuals' sexual identity in the initial phases of their affective and sexual trajectories. It is indeed likely that early emotional and sexual development is shaped by heteronormativity. Individuals who represent a sexual minority may accordingly be less likely to have a romantic relationship, or an incomplete or complete sexual experience, and more likely to have fewer potential partners and be stigmatised. Finally, we are unable to ascertain the voluntary nature of sexual debut; forced sexual experiences may be present, especially among women and ethnic and sexual minorities. Future studies might endeavour to account for these important aspects.

We conclude with two important considerations. First, our findings show a clear need to consider not only first sexual intercourse but also other key life-course events in young sexual development, such as first romantic relationship and first incomplete sexual experience. Second, our results highlight the fact that concentrating on just one 'typical' trajectory of affective and sexual development may fail to capture the complexity of sexual debut pathways. Indeed, a more comprehensive perspective that looks at the multiple trajectories of romantic and sexual development may paint a more accurate picture. In this paper, we endeavour to fill this gap for Italy, a country that has been relatively under-studied in this respect. Though often identified with a double-standard system, we show that among the more recent cohorts, certain elements of an equal-gender system have emerged in the romantic and sexual trajectories of young Italian men and women.

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Appendix

Table A-1: Estimated model coefficients of the multinomial logistic regressions on the probability of belonging to a specific trajectory (for compactness we reported Model A, E, F)

	Model A			Model E			Model F		
	coef	std error	p-value	coef	std error	p-value	coef	std error	p-value
The benchmark									
Gender (ref. Male)									
Female	0.387	0.067	0.000	0.211	0.071	0.003	0.557	0.175	0.001
Birth cohort (ref. 1975–1979)									
1980–1981	–0.038	0.110	0.732	–0.046	0.112	0.684	0.123	0.186	0.506
1991–1995	–0.346	0.108	0.001	–0.174	0.112	0.121	0.075	0.172	0.662
1996–1997	–0.218	0.097	0.024	–0.060	0.101	0.551	0.213	0.160	0.184
Final score at lower secondary									
High school (ref. Lyceum)				0.082	0.032	0.010	0.080	0.032	0.012
Technical				0.028	0.076	0.707	0.024	0.076	0.750
Vocational				0.027	0.208	0.897	0.014	0.209	0.946
Unknown				–0.052	0.386	0.893	–0.050	0.386	0.897
Disco attendance (ref. No)									
Yes				–0.764	0.135	0.000	–0.768	0.135	0.000
Smoke (ref. No)									
Yes				–1.440	0.376	0.000	–1.428	0.376	0.000
Church attendance (ref. Never)									
Sometimes in a year				0.063	0.120	0.602	0.063	0.120	0.597
Once a month				–0.041	0.146	0.777	–0.040	0.146	0.784
Two to three times a month				0.253	0.122	0.038	0.252	0.122	0.038
Once a week or more				0.578	0.118	0.000	0.574	0.118	0.000
Unknown				0.264	0.279	0.344	0.267	0.279	0.339
Parental education (ref. Lower secondary at most)									
Upper secondary				–0.385	0.091	0.000	–0.383	0.091	0.000
Tertiary				–0.288	0.105	0.006	–0.283	0.105	0.007
Unknown				0.015	0.401	0.971	0.017	0.401	0.965
Mother's work (ref. No)									
Yes				–0.068	0.076	0.367	–0.068	0.076	0.373
Unknown				–0.387	0.221	0.080	–0.386	0.221	0.081

Table A-1: (Continued)

	Model A			Model E			Model F		
	coef	std error	p-value	coef	std error	p-value	coef	std error	p-value
Parental marital status (ref. Married parents)									
Cohabiting parents				-0.236	0.299	0.429	-0.238	0.298	0.424
Separated parents				-0.416	0.180	0.020	-0.418	0.180	0.020
Unknown				0.028	0.237	0.907	0.029	0.237	0.902
Macro-area of residence (ref. North)									
Centre				-0.037	0.089	0.680	-0.040	0.089	0.658
South				-0.110	0.080	0.170	-0.112	0.080	0.162
Abroad				0.515	0.340	0.129	0.506	0.340	0.137
Unknown				-0.033	0.468	0.945	-0.030	0.468	0.949
Gender*Birth cohort									
Female*1980–1981							-0.265	0.234	0.257
Female*1991–1995							-0.424	0.224	0.059
Female*1996–1997							-0.461	0.203	0.023
Constant	-1.079	0.137	0.000	-1.358	0.313	0.000	-1.345	0.320	0.000
The forerunners (base outcome)									
The late starters									
Gender (ref. Male)									
Female	0.088	0.083	0.291	-0.126	0.088	0.152	-0.057	0.194	0.767
Birth cohort (ref. 1975–1979)									
1980–1981	-0.189	0.131	0.147	-0.199	0.133	0.135	-0.239	0.203	0.240
1991–1995	-0.708	0.132	0.000	-0.528	0.138	0.000	-0.503	0.194	0.009
1996–1997	-0.443	0.114	0.000	-0.257	0.120	0.033	-0.192	0.173	0.267
Final score at lower secondary				0.126	0.040	0.001	0.125	0.040	0.002
High school (ref. Lyceum)									
Technical				0.174	0.093	0.062	0.172	0.093	0.065
Vocational				0.208	0.254	0.411	0.201	0.254	0.428
Unknown				-0.343	0.552	0.534	-0.347	0.552	0.529
Disco attendance (ref. No)									
Yes				-1.168	0.201	0.000	-1.171	0.201	0.000
Smoke (ref. No)									
Yes				-1.794	0.593	0.002	-1.792	0.593	0.003
Church attendance (ref. Never)									
Sometimes in a year				-0.290	0.144	0.044	-0.289	0.144	0.045
Once a month				-0.412	0.182	0.024	-0.412	0.182	0.024
Two to three times a month				-0.098	0.146	0.504	-0.097	0.146	0.506
Once a week or more				0.353	0.137	0.010	0.352	0.137	0.010
Unknown				-0.136	0.351	0.697	-0.135	0.351	0.699

Table A-1: (Continued)

	Model A			Model E			Model F		
	coef	std error	p-value	coef	std error	p-value	coef	std error	p-value
Parental education (ref. Lower secondary at most)									
Upper secondary				-0.492	0.109	0.000	-0.490	0.109	0.000
Tertiary				-0.472	0.129	0.000	-0.470	0.129	0.000
Unknown				-0.020	0.456	0.964	-0.017	0.456	0.969
Mother's work (ref. No)									
Yes				-0.158	0.093	0.090	-0.158	0.093	0.091
Unknown				0.052	0.235	0.824	0.056	0.235	0.813
Parental marital status (ref. Married parents)									
Cohabiting parents				0.068	0.336	0.841	0.066	0.336	0.845
Separated parents				-0.295	0.220	0.180	-0.292	0.220	0.185
Unknown				0.224	0.277	0.418	0.227	0.277	0.412
Macro-area of residence (ref. North)									
Centre				-0.066	0.109	0.546	-0.067	0.109	0.537
South				-0.276	0.101	0.006	-0.276	0.101	0.006
Abroad				0.973	0.363	0.007	0.968	0.363	0.008
Unknown				0.551	0.457	0.228	0.547	0.457	0.231
Gender*Birth cohort									
Female*1980–1981							0.062	0.268	0.817
Female*1991–1995							-0.053	0.269	0.845
Female*1996–1997							-0.136	0.233	0.559
Constant	-1.025	0.162	0.000	-1.224	0.382	0.001	-1.377	0.383	0.000
Romantic love									
Gender (ref. Male)									
Female	0.291	0.071	0.000	0.144	0.074	0.050	0.649	0.216	0.003
Birth cohort (ref. 1975–1979)									
1980–1981	0.088	0.131	0.502	0.120	0.133	0.365	0.431	0.224	0.055
1991–1995	0.194	0.121	0.110	0.298	0.125	0.017	0.627	0.203	0.002
1996–1997	0.384	0.111	0.001	0.492	0.115	0.000	0.876	0.193	0.000
Final score at lower secondary				0.044	0.033	0.185	0.042	0.033	0.213
High school (ref. Lyceum)									
Technical				0.142	0.079	0.072	0.138	0.079	0.080
Vocational				-0.024	0.221	0.913	-0.034	0.221	0.877
Unknown				-0.570	0.499	0.253	-0.572	0.499	0.251
Disco attendance (ref. No)									
Yes				-0.349	0.122	0.004	-0.351	0.122	0.004
Smoke (ref. No)									
Yes				-0.569	0.261	0.029	-0.559	0.261	0.032

Table A-1: (Continued)

	Model A			Model E			Model F		
	coef	std error	p-value	coef	std error	p-value	coef	std error	p-value
Church attendance (ref. Never)									
Sometimes in a year				0.158	0.123	0.201	0.159	0.123	0.198
Once a month				0.084	0.149	0.574	0.086	0.149	0.562
Two to three times a month				0.300	0.127	0.018	0.300	0.127	0.018
Once a week or more				0.552	0.123	0.000	0.547	0.123	0.000
Unknown				0.432	0.280	0.123	0.435	0.280	0.121
Parental education (ref. Lower secondary at most)									
Upper secondary				-0.156	0.097	0.108	-0.154	0.097	0.113
Tertiary				-0.276	0.114	0.016	-0.271	0.114	0.018
Unknown				-0.332	0.446	0.457	-0.331	0.446	0.458
Mother's work (ref. No)									
Yes				0.002	0.080	0.983	0.002	0.080	0.979
Unknown				0.059	0.200	0.769	0.059	0.200	0.768
Parental marital status (ref. Married parents)									
Cohabiting parents				-0.148	0.298	0.619	-0.149	0.297	0.616
Separated parents				-0.207	0.174	0.234	-0.211	0.174	0.226
Unknown				-0.029	0.240	0.903	-0.027	0.240	0.911
Macro-area of residence (ref. North)									
Centre				0.003	0.098	0.974	0.001	0.098	0.990
South				0.241	0.084	0.004	0.239	0.084	0.005
Abroad				0.750	0.351	0.033	0.729	0.351	0.038
Unknown				0.928	0.375	0.013	0.933	0.375	0.013
Gender*Birth cohort									
Female*1980–1981							-0.476	0.279	0.088
Female*1991–1995							-0.525	0.257	0.042
Female*1996–1997							-0.627	0.238	0.009
Constant	-1.494	0.151	0.000	-1.938	0.332	0.000	-2.094	0.350	0.000
Sexuality explorers									
Gender (ref. Male)									
Female	0.027	0.070	0.699	-0.093	0.073	0.205	0.187	0.168	0.265
Birth cohort (ref. 1975–1979)									
1980–1981	0.234	0.107	0.028	0.233	0.108	0.031	0.278	0.165	0.092
1991–1995	-0.864	0.117	0.000	-0.710	0.120	0.000	-0.432	0.166	0.009
1996–1997	-0.504	0.099	0.000	-0.374	0.103	0.000	-0.157	0.150	0.295
Final score at lower secondary				0.024	0.033	0.468	0.023	0.033	0.491

Table A-1: (Continued)

	Model A			Model E			Model F		
	coef	std error	p-value	coef	std error	p-value	coef	std error	p-value
High school (ref. Lyceum)									
Technical				-0.029	0.078	0.708	-0.036	0.078	0.646
Vocational				-0.207	0.227	0.363	-0.226	0.228	0.321
Unknown				-0.452	0.440	0.304	-0.446	0.440	0.311
Disco attendance (ref. No)									
Yes				-0.486	0.125	0.000	-0.497	0.125	0.000
Smoke (ref. No)									
Yes				-0.399	0.245	0.103	-0.384	0.245	0.116
Mass attendance (ref. Never)									
Sometimes in a year				-0.030	0.127	0.814	-0.024	0.127	0.850
Once a month				0.192	0.146	0.189	0.196	0.146	0.179
Two to three times a month				0.267	0.127	0.035	0.271	0.127	0.033
Once a week or more				0.486	0.123	0.000	0.483	0.123	0.000
Unknown				0.338	0.281	0.229	0.347	0.282	0.217
Parental education (ref. Lower secondary at most)									
Upper secondary				-0.148	0.095	0.120	-0.146	0.095	0.126
Tertiary				-0.213	0.112	0.056	-0.208	0.112	0.063
Unknown				0.009	0.443	0.985	0.012	0.443	0.979
Mother's work (ref. No)									
Yes				-0.095	0.078	0.223	-0.093	0.078	0.234
Unknown				-0.193	0.219	0.379	-0.192	0.219	0.380
Parental marital status (ref. Married parents)									
Cohabiting parents				-0.084	0.312	0.788	-0.096	0.313	0.759
Separated parents				-0.423	0.194	0.029	-0.421	0.194	0.030
Unknown				-0.249	0.279	0.372	-0.244	0.279	0.381
Macro-area of residence (ref. North)									
Centre				-0.152	0.093	0.102	-0.157	0.093	0.091
South				-0.115	0.083	0.164	-0.118	0.083	0.155
Abroad				-0.064	0.426	0.881	-0.052	0.427	0.903
Unknown				-0.148	0.524	0.777	-0.152	0.524	0.772
Gender*Birth cohort									
Female*1980-1981							-0.077	0.218	0.723
Female*1991-1995							-0.595	0.240	0.013
Female*1996-1997							-0.413	0.202	0.041
Constant	-0.503	0.137	0.000	-0.440	0.320	0.170	-0.681	0.323	0.035

Table A-1: (Continued)

	Model A			Model E			Model F		
	coef	std error	p-value	coef	std error	p-value	coef	std error	p-value
Sex without commitment									
Gender (ref. Male)									
Female	-0.270	0.076	0.000	-0.336	0.079	0.000	-0.370	0.179	0.039
Birth cohort (ref. 1975–1979)									
1980–1981	-0.504	0.130	0.000	-0.497	0.131	0.000	-0.370	0.178	0.038
1991–1995	-0.271	0.114	0.017	-0.162	0.118	0.169	-0.147	0.155	0.340
1996–1997	-0.397	0.106	0.000	-0.291	0.110	0.008	-0.369	0.149	0.013
Final score at lower secondary				0.017	0.035	0.621	0.020	0.035	0.578
High school (ref. Lyceum)									
Technical				0.032	0.084	0.708	0.035	0.084	0.680
Vocational				0.280	0.207	0.177	0.291	0.208	0.161
Unknown				0.076	0.399	0.849	0.074	0.399	0.852
Disco attendance (ref. No)									
Yes				-0.102	0.119	0.390	-0.097	0.119	0.414
Smoke (ref. No)									
Yes				-0.559	0.261	0.033	-0.566	0.262	0.030
Church attendance (ref. Never)									
Sometimes in a year				-0.161	0.122	0.188	-0.164	0.122	0.180
Once a month				-0.021	0.146	0.884	-0.026	0.146	0.859
Two to three times a month				0.044	0.126	0.729	0.042	0.126	0.739
Once a week or more				0.115	0.124	0.353	0.116	0.124	0.347
Unknown				-0.001	0.305	0.997	-0.006	0.306	0.985
Parental education (ref. Lower secondary at most)									
Upper secondary				-0.285	0.102	0.005	-0.290	0.102	0.005
Tertiary				-0.304	0.119	0.010	-0.308	0.119	0.009
Unknown				0.235	0.397	0.554	0.235	0.397	0.553
Mother's work (ref. No)									
Yes				-0.140	0.085	0.098	-0.141	0.085	0.096
Unknown				0.320	0.191	0.094	0.312	0.191	0.102
Parental marital status (ref. Married parents)									
Cohabiting parents				-0.225	0.311	0.470	-0.224	0.311	0.472
Separated parents				-0.497	0.200	0.013	-0.501	0.200	0.012
Unknown				-0.136	0.255	0.593	-0.140	0.255	0.583

Table A-1: (Continued)

	Model A			Model E			Model F		
	coef	std error	p-value	coef	std error	p-value	coef	std error	p-value
Macro-area of residence (ref. North)									
Centre				0.054	0.099	0.586	0.057	0.099	0.565
South				-0.095	0.090	0.292	-0.094	0.090	0.295
Abroad				-0.154	0.473	0.745	-0.148	0.473	0.754
Unknown				0.527	0.409	0.197	0.532	0.408	0.192
Gender*Birth cohort									
Female*1980–1981							-0.276	0.263	0.295
Female*1991–1995							-0.014	0.232	0.954
Female*1996–1997							0.216	0.213	0.311
Constant	-0.290	0.145	0.046	-0.046	0.337	0.891	-0.392	0.336	0.243

Note: The most numerous cluster, the forerunners, has been chosen as the base outcome.

